

Annex H1 – Earthquake

Primary Agency: Illinois Emergency Management Agency (IEMA)

Support Agencies: Other State Agencies, Boards and Commissions

I. Annex Organization

- A. This annex includes key functional requirements necessary for response and recovery to an earthquake and serves as a supplement to the Illinois Emergency Operations Plan (IEOP).
- B. Appendices describe primary and support agency activities for the conduct of response and recovery, as well as outlying strategic and operational priorities. Appendices will contain State Emergency Operations Center (SEOC) procedural checklists for liaisons as appropriate.
- C. Attachments and tabs provide clarification or additional information to support an appendix and specific graphic information.

II. Introduction

A. Purpose

- 1. Provide and outline strategic and operational guidance for the initial response and short-term recovery to ensure command, coordination, communication and control of state activated and deployed resources and responsible agencies/organizations following a catastrophic earthquake.

B. Scope

- 1. This annex addresses state supported operations approved by the SEOC and is scalable and modular based on scope and magnitude of an event.
- 2. This annex addresses response efforts directed towards unique aspects of an earthquake, and it identifies and assigns specific areas of responsibility for performing specific response functions.
- 3. This annex applies to all state agencies, boards and commissions assigned a role or responsibility in response and short-term recovery.

C. Policy

- 1. Implementation of this annex will not supersede any Authority Having Jurisdiction (AHJ's) administrative protocols or policy concerning immediate response and recovery operations.

2. Procedures for utilization, control and use of state approved resources will incorporate and/or consider operational priorities that include, but are not limited to, the protection of life, public health and safety, property protection, environmental protection, restoration of essential utilities, restoration of essential program functions and coordination as appropriate.
3. The SEOC will establish and disseminate strategies, priorities, and critical information requirements to stakeholders, key decision-makers and executive officials.
4. State agency personnel will be trained to the assigned mission and be made aware of potential risks involved.
5. Agencies and organizations conducting response and initial recovery are responsible for training personnel in requirements and processes.
6. At the direction of the Governor or designee, state agencies without a direct response role may be tasked with providing agency personnel in support of operations.
7. All agencies, departments, boards and commissions will provide resources (equipment, material and personnel) as directed by the SEOC.
8. Local governments will likely be overwhelmed from the onset and requests for state support will be immediate.
9. The state may deploy resources prior to a request from a local AHJ or private sector organization to implement life safety and life essential operations.

D. Situation Overview

1. An earthquake has occurred resulting in damage to critical infrastructure, public and/or private property.
 - a) For the purposes of catastrophic planning the following scenarios are considered:
 - 1) A magnitude 7.7 or greater along the NMSZ;
 - 2) A magnitude 7.1 or greater earthquake along the WVSZ;
 - 3) Simultaneous or cascading earthquakes of 7.7 magnitude or greater occur along the NMSZ and 7.1 magnitude or greater along the WVSZ; and
 - 4) Aftershocks will occur along the NMSZ and WVSZ of equal or greater magnitude affecting 40 counties.

2. Geographic Overview

- a) Southern Illinois is the most active seismic area of the state. Two seismic zones that have been identified in southern and southeastern Illinois include the New Madrid Seismic Zone (NMSZ) and the Wabash Valley Seismic Zone (WVSZ).
- b) The NMSZ stretches from southwest Illinois through Missouri, Kentucky and Tennessee, to northeast Arkansas. The northern tip of the northeast segment is located in Alexander County in Illinois.
- c) The WVSZ is located in southeastern Illinois and southwestern Indiana. The fault line stretches across Wabash, Edwards and White counties.
- d) An earthquake or series of earthquakes of the magnitude predicted, would directly impact 40 counties in southern Illinois.

3. Hazard Analysis Summary

- a) The New Madrid Seismic Zone (NMSZ) has produced some of the most devastating seismic events in U.S. history. During the winter of 1811 and 1812, a series of three earthquakes, with estimated magnitudes of approximately 8.0, struck northeast Arkansas and southeast Missouri.
- b) The Wabash Valley Seismic Zone (WVSZ) has the potential to produce seismic events of equal magnitude to the NMSZ, and has shown recent activity, including a 5.0 magnitude event in 2002, and a 5.4 magnitude event in 2008.
- c) According to the United States Geological Survey (USGS), and the Center for Earthquake Research, the following probabilities of an earthquake of the NMSZ over a 50-year period are provided:
 - 1) The probability of a magnitude 7.7 to 8.0, similar to the 1811-1812 events, is estimated at 7 to 10 percent.
 - 2) The probability of a magnitude 6.0 or larger is estimated at 25 to 40 percent.

- 4. An earthquake or series of earthquakes of the magnitude predicted, in either the NMSZ or WVSZ would have considerable repercussions state-wide.

E. Assumptions

- 1. Local operational capability and capacity will be severely reduced or rendered inoperable.

2. The state will suffer direct and indirect impacts including, but not limited to economic loss, reductions in operation capability and capacity and widespread, variable damage.
3. Long-term impacts will require continued and sustained state support for the restoration of critical community functions, services, vital resources, facilities, programs and infrastructure in the affected areas.
4. State assistance will be required to restore and establish life essential services or life line infrastructure, and establish population related disaster services statewide.
5. State response will be activated in advance of any requests for the conduct of operational doctrine, life-safety missions and staging.
6. Mutual Aid Agreements and compacts will be activated.
7. Critical infrastructure in key sectors will be severely disrupted for an extended time period in areas within and beyond the immediate affected area(s) of an earthquake.
8. Secondary effects (e.g. fires, dam/levee breaches, hazardous materials spills) will create hazardous environments.
9. Aftershocks will cause additional damage to infrastructure and/or loss of life and injury and create additional life safety risks for first responders.
10. Large numbers of injuries and fatalities and the loss of local public health and medical services will exhaust local capabilities.
11. Rapid needs assessment and disaster intelligence will be critical in determining impacted areas and priorities of effort.
12. Until immediate transportation and communication issues are addressed, statewide responding departments/agencies/Mutual Aid organizations will have significant reductions in capability and capacity in the affected area.
13. Dissemination of public information will be hindered.
14. Private sector, voluntary and community-based organizations will work cooperatively with whole community partners.
15. Private sector, voluntary and community-based organizations will self-deploy or spontaneously respond without direct coordination with higher, lateral or subordinate levels of government.
16. Limited federal assistance will be available based on impacts from a catastrophic earthquake across the affected area.

17. Key stakeholders, partners, executive officials and the public will contact the SEOC, Business Emergency Operations Center (BEOC) or state agencies regarding impacts, resource requests and state support.
18. Large number of spontaneous activations will occur.

III. Concept of Operations

A. General

1. Disaster intelligence and rapid needs assessments will be used to determine situational awareness, develop a common operating picture, and identify actions necessary for life-sustaining operations.
2. Agencies will deploy and mobilize staff in accordance with individual agency procedures, or as directed by the SEOC.
3. Mobile Support Teams and mutual aid resources activated by the state will be coordinated and managed through the SEOC.
4. Incident needs identified by key stakeholders, partners, executive officials and the public, received by the SEOC, will be incorporated into a SEOC Common Operating Picture (COP) and situational reports.
5. The state will provide support for critical infrastructure in coordination with and activation of the SEOC and BEOC.
6. The SEOC Private Sector Liaison will coordinate with the National BEOC to support private sector information sharing and strategic awareness.
7. The Statewide Terrorism and Intelligence Center – Public Safety Group (PS-STIC) will provide collection, analysis and information sharing capabilities.
8. The U.S. Department of Homeland Security Protective Security Advisory (DHS-PSA) provides support to assist in critical infrastructure impact assessment and awareness.
9. State support is based on resource availability, capability and prioritization of effort.
10. Resource shortfalls identified during response and recovery will be met through the activation of mutual aid agreements, service contracts, compacts and utilization of personnel.

B. Notification, Alert and Warning (NAW)

1. IEMA will respond to USGS earthquake notifications in accordance with IEMA's USGS Earthquake Notification SOP 09-001.

2. SEOC notification, alert and warning of SEOC liaisons will be handled in accordance with IEOP Appendix A-1, Notification, Alert and Warning.
3. Primary and support agencies are responsible for internal and support partner notification.
4. For the purposes of the Illinois Plan for Radiological Accidents (IPRA), in the event of a Nuclear Accident Reporting System (NARS) notification regarding conditions at a Nuclear Power Station (NPS), and/or notifications from other regulated facilities, IEMA will notify the appropriate staffs in accordance with procedure(s).
5. Factors that may influence notifications and corresponding processes for NPS include, but are not limited to:
 - a) Magnitude of the earthquake
 - b) Location or origin of the earthquake
 - c) Impact on/to individual site or facility
 - d) Specific classification(s) and/or response action(s) taken by individual NPS and/or other regulated facilities in accordance with internal procedures
 - e) Requirements established or implemented through the Nuclear Regulatory Commission (NRC)

C. Activation

1. The SEOC will provide state support through the activation of identified liaisons in accordance with SEOC Activation Level SOP.
2. SEOC Activation Level Standard Operating Procedure (SOP) will be used to determine staffing levels necessary for damage assessment coordination.
3. American Red Cross will activate based on requests for assistance from local and state emergency management agencies or from disaster survivors.

D. Communications

1. Communications will be conducted in accordance with standard operating procedures and managed using established procedures, processes and policy outlined in IEOP, Annex 3 Communications.
2. Communications will be conducted in a manner compliant with the National Incident Management System (NIMS), utilizing clear-text and frequencies coordinated with the SEOC.

3. Methods used to overcome communications deficiencies due to system failures, interruptions and resource capabilities will be coordinated through the SEOC with the SEOC Communications Coordinator (COMC) or designee.
4. For the purposes of earthquake specific communications considerations will be conducted in a manner consistent with IEOP, Hazard Specific Annex H1, Earthquake, Appendix 3, Communications.

E. Resource Management and Logistics

1. Resource management and logistics will be carried out in accordance with IEOP, Annex 9 Resource Management and Logistics.
2. For the purposes of earthquake specific resource management and logistics, considerations will be conducted in a manner consistent with IEOP, Hazard Specific Annex H1, Earthquake, Appendix 9, Resource Management and Logistics.
3. Resource ~~M~~management and Logistics includes mutual aid agreements and assistance agreements; the use of special federal and state teams; and resource mobilization protocols.

F. Reporting Requirements

1. Upon activation to the SEOC, all SEOC liaison officers (LNOs) for agencies having a primary or support role will compile and disseminate situational reports as directed by the SEOC manager.
2. SEOC information, intelligence and situation reporting will be conducted in accordance with the SEOC Situation and Rapid Needs Assessment Standard Operating Guideline ~~and~~, IEOP Annex 10, Damage Assessment and Annex 28, Disaster Intelligence.

G. Implementation Requirements

1. Notification, activation, deployment, coordination, implementation and sustainment (NADCIS) of state resources in support of response and recovery operations management will be approved and coordinated through the SEOC.
2. Implementation of state-supported operations is predicated on SEOC approval of a request from a local government, private sector organization or state agency.
3. NADCIS requirements for response and recovery operations must be fully addressed.
4. The Governor or his/her designee has the authority to call the Illinois National Guard (ILNG) into state active duty (SAD) status. Upon SAD

activation, all ILNG forces and equipment are available assets to SEOC and all state partners.

5. The Governor or his/her designee has the authority to request assistance from participating organizations in the Emergency Management Assistance Compact (EMAC).

H. Organization

1. Direction and Control

- a) The SEOC is the single point of coordination for state supported response and recovery operations.
- b) The SEOC will provide support for coordination and management of strategic and operational elements through activation of state agency personnel and Mobile Support Teams (MST).
 - 1) The SEOC may activate individual forward elements including, but not limited to State Unified Area Command (SUAC), State Area Command (SAC), State Task Forces (STF) and islands of response or strike teams.
 - 2) Upon activation of forward elements, the SEOC manager may delegate authority for coordination and management to the appropriate level of command and control.
- c) Forward elements will coordinate and manage assigned resources in accordance with established policy and procedure.
- d) State agencies and external organizations retain operational control of resources.
- e) The SEOC Manager or designees may establish one or more Element Specific Support Function (ESSF) to support response and recovery.
- f) The SEOC Manager or designees may coordinate the use of county or local jurisdiction resources to support assigned missions and tasking when so authorized or requested.
- g) The SEOC Manager, liaisons or designees will coordinate with local, state, federal and private organizations in developing strategic plans and response and recovery priorities.
- h) For unity of command, coordination and management of the SEOC, the SEOC Manager will transfer command to the State Disaster Recovery Coordinator, at the cessation of short-term

recovery and continuation of intermediate and long-term recovery efforts.

2. Coordinating Elements

- a) State-deployed Mobile Support Teams (MST) may be assigned to support or coordinate local or state strategic operations.
 - 1) In support of local or state operations, MST may be assigned under the direct coordination and management of a designated state agency or response and recovery element.
- b) State forward elements may be deployed by the SEOC to coordinate information and determine resource requirements in support of operations.
- c) The SEOC will establish command structures in forward areas of operation to coordinate with private sector, voluntary and community-based organizations that have self-deployed or spontaneously responded to ensure safety, security, and accountability of responding personnel and prioritize resource allocations to maximize lifesaving/sustaining efforts.
- d) Coordination between private sector organizations and state agencies will be maintained through the SEOC and BEOC.

2. Federal Coordination

- a) IEMA will coordinate the integration and inclusion of federal assets into state operations.
- b) SEOC LNOs, state agencies, boards and commissions will coordinate with federal counterparts in accordance with enabling authority.

IV. Roles and Responsibilities

A. Illinois Emergency Management Agency (IEMA)

- 1. Coordinates collection, receipt, compilation and development of situational reports on damage impacts to services, facilities, sites and programs at the federal, state and local levels.
- 2. Collects, analyzes, de-conflict and disseminate disaster intelligence and information.
- 3. Establishes and disseminates Essential Elements of Information (EEI), Critical Information Requirements (CIR) and Priority Information Requirements (PIR) provided by the SEOC.

4. Coordinates with affected local governments and private sector organizations.
 5. Prioritizes resource allocations and requests for support.
 6. Assists in determining impact areas.
 7. Develops and maintains maps, visual aids and displays in coordination with:
 - a) Primary and support agencies
 - b) Boards and commissions
 - c) Voluntary and community-based organizations
 - d) Private sector organizations
 - e) Federal and external state agencies
 - f) Local governments
 - g) Executive and senior leadership
 8. Coordinates activation of MST and ESSF resources.
 9. Coordinates with federal agencies and representatives.
 10. Determines the need to request federal disaster assistance.
 11. Coordinates collection, receipt, compilation and development of situational reports, maps, visual aids and displays on damage impacts.
 12. Coordinates the provision for just-in-time-training and/or site specific training to personnel assigned ad hoc responsibilities, missions and tasks.
- B. General Requirements for Other State Agencies, Boards and Commissions
1. Staff SEOC, SUAC and liaison positions in areas designated by the SEOC manager.
 2. Coordinate collection, receipt, compilation, development and dissemination of situational reports on damage impacts to agency services, facilities, sites and programs.
 3. Coordinate collection, receipt, compilation, development and dissemination of agency specific situational reports to the SEOC for determination of organic capability and capacity.
 4. Identify agency roles and responsibilities in service delivery and coordination for implementing IEOP annexes and appendices.
 5. Identify internal and external stakeholders' capability and capacity necessary to carry out roles and responsibilities.

6. Identify agency EEI and disseminate to the SEOC.
7. Provide intelligence and information on CIR/PIR as directed by the SEOC manager.
8. Identify resource requirements, priorities and allocations to make appropriate requests to the SEOC manager.
9. Coordinate just-in-time-training and/or site specific training to agency personnel assigned responsibilities, missions and tasks.
10. Ensure NADCIS of agency personnel and equipment in support of state approved operations.
11. Develop Phased Action Level documentation to determine the need for augmentation including the use of externally available resources.

V. Authorities and References

A. Authorities

1. 20 ILCS 3305, IEMA Act, as amended
2. Illinois Emergency Operations Plan, as amended

B. References

1. Robert T. Stafford Act, as amended
2. Mid-America Earthquake (MAE) Center, New Madrid Seismic Zone Catastrophic Earthquake Response Planning, Volume 1, October 2009
3. MAE Center, New Madrid Seismic Zone Catastrophic Earthquake Response Planning, Volume 2, October 2009
4. MAE Center, Comprehensive Seismic Loss Assessment for the State of Illinois, March 2007

VI. Attachments

- A. Appendices as identified
- B. Tab A – C4 Maps
- C. Tab B – Earthquake Evacuation Time Estimates
- D. Tab C – Independent Task Sequencing